

What Is Claimed Is:

1. A PVC switching control method for controlling a PVC connection in an ATM communication network, comprising the steps of:

5           setting a plurality of PVC connections and individually corresponding controlling connections between two ATM exchanges of the ATM communication network; and

10           detecting, by each of the ATM exchanges, occurrence of and release from a trouble with and of a PVC connection corresponding to any of the controlling connections and switching an operative PVC connection to another one of the PVC connections in response to a result of the detection.

15           2. A PVC switching control method as claimed in claim 1, wherein, if, while one of the PVC connections is used as the currently used PVC connection, it is detected from the corresponding controlling connection that a trouble has occurred with the PVC connection, then each of the ATM exchanges switches the operative PVC connection to another one of the PVC connections as a bypassing PVC connection.

20           3. A PVC switching control method as claimed in claim 2, wherein, if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the ATM exchanges switches the operative PVC connection  
25           to the currently used PVC connection.

4. A PVC switching control method as claimed in claim

1, wherein the controlling connections are set by an operation administration and maintenance function.

5 5. A PVC switching control method as claimed in claim 4, wherein each of the ATM exchanges detects a trouble through the fact that an alarm indication signal cell of the operation administration and maintenance function is inputted thereto.

10 6. A PVC switching control method as claimed in claim 4, wherein each of the ATM exchanges detects a trouble through the fact that a continuity check cell of the operation administration and maintenance function is not inputted thereto.

7. A PVC switching control method for controlling a PVC connection in an ATM communication network, comprising the steps of:

15 setting a master PVC connection and a master side operation administration and maintenance connection corresponding to the master PVC connection between a first ATM exchange and a second ATM exchange;

20 setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side operation administration and maintenance connection corresponding to the bypassing PVC connection between the first and second ATM exchanges; and

25 switching, if both of the first and second ATM exchanges detect a trouble of the master PVC connection through the master side operation administration and maintenance connection, the

PVC connection to the bypassing PVC connection by means of the first and second ATM exchanges.

8. A PVC switching control method as claimed in claim 7, wherein, if, while the first and second ATM exchanges use the bypassing PVC connection, the first and second ATM exchanges detect a release of the master PVC connection through the master side OAM connection, each of the first and second ATM exchanges switches the PVC connection to the master PVC connection.

9. A PVC switching control method as claimed in claim 7, wherein a plurality of repeating ATM exchanges are connected on a route of the bypassing PVC connection and a connection for forming the bypassing PCV connection is set in each of the repeating ATM exchanges.

10. A PVC switching control method as claimed in claim 9, wherein each of the first and second ATM exchanges designates the connection set in advance and signals an ATM cell to a neighboring one of the plurality of repeating ATM exchanges through the designated connection.